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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,105	06/20/2003	J. Fernando Bazan	DX0903K1B US	7017

24265 7590 02/09/2007
SCHERING-PLOUGH CORPORATION
PATENT DEPARTMENT (K-6-1, 1990)
2000 GALLOPING HILL ROAD
KENILWORTH, NJ 07033-0530

EXAMINER	
SKELDING, ZACHARY S	
ART UNIT	**PAPER NUMBER**
1644	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/601,105	BAZAN ET AL.	
	Examiner	Art Unit	
	Zachary Skelding	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21,23-27 and 41-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21,23-27 and 41-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7-21-03 and 10-30-06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The examiner of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Examiner Zachary Skelding, Group Art Unit 1644.

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office Action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 30, 2006 has been entered.

3. Applicant's amendment to the claims, filed October 30, 2006, has been entered.

   Claims 21, 23-27 and 41-44 are pending.

   Claims 21 and 23-27 have been amended.

   Claims 1-20, 22 and 28-40 have been canceled.

   Claims 41-44 have been added.

   Claims 21, 23-27 and 41-44 are under examination as they read on an antibody or fragment thereof that binds SEQ ID NO: 2.

4. This Office Action is in response to Applicant's amendment to the claims and remarks filed October 30, 2006.

   The rejections of record can be found in the previous Office Action, mailed May 3, 2006.

   The text of those sections of Title 35 U.S.C. not included in this Action can be found in a prior action.

   All prior objections and rejections not mentioned below have been withdrawn.

5. Applicant's Information Disclosure Statement filed October 30, 2006 has been considered.

   Furthermore it is noted that applicant's request the Examiner consider document EP 0314415 A2 listed on the IDS filed July 18, 2003, and return an initialed copy. The document has been considered and the initialed copy is attached herewith.

6. Applicant is advised that the instant claims can only receive benefit under 35 U.S.C. § 120 or § 119(e) of an earlier application date if the earlier application provides support for the instant claims under 35 U.S.C. § 112, 1st paragraph.

The instant specification and the application from which it is a divisional, 09/963,347, filed September 25, 2001, provide support under 35 U.S.C. § 112, 1st paragraph for the instant claims.

However, with respect to the claims under examination, the applications to which 09/963,347 claims the benefit of priority do ***not*** meet the requirements of 35 U.S.C. § 112, first paragraph, essentially for the reasons given in the prior Office Action, ***and as outlined further below***.

Thus, the effective priority date of the instant claims is considered to be the filing date of 09/963,347, ***September 25, 2001.***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 23-27, 41 and 42 are rejected under 35 U.S.C. 112, 2nd paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. **This is a New Grounds of Rejection.**

A. "antibody or fragment thereof": Claims 23-27 and 41

Claims 23-27 and 41 are indefinite in that they recite in their preamble "the **fragment** of **claim 21**" or "the **antibody** of **claim 21**"; however, claim 21 is drawn to "an isolated ***antibody or fragment thereof*** that specifically binds...". Thus, the preamble of the instant claims lacks sufficient antecedent basis in claim 21, and therefore the instant claims are indefinite.

Applicant is invited to amend the instant claims such that the preamble properly refers to the preamble of base claim 21, for example, "the antibody or fragment thereof of claim 21, wherein the..."

B. Hybridoma: Claim 42

Claim 42 is indefinite in that ***"a hybridoma"*** cannot ***comprise an antibody*** as a hybridoma is a cell line that produces an antibody, but it cannot comprise an antibody.

Applicant is invited to amend claim 42 such that it is an independent claim, e.g., "A hybridoma that produces an antibody that specifically binds a polypeptide consisting of SEQ ID NO:2".

Applicant is reminded that hybridomas make antibodies, not discrete antibody fragments, such as Fab2 fragments.

Applicant is further reminded that any amendment must point to a basis in the specification so as not to add new matter. See MPEP 714.02 and 2163.06.

8. **Claims 21, 23, 26 and 27 stand rejected, and claims 24, 25 and 41-44 are rejected under 35 U.S.C. 102(e)** as anticipated by Sims et al. (US Patent 6,555,520, previously cited), as evidenced by Bost et al. (Immunol. Invest. 1988; 17:577-586) and Bendayan et al. (J. Histochem. Cytochem. 1995; 43:881-886), essentially for the same reasons set forth in the Office Action mailed May 3, 2006.

Applicant argues that the earliest filed application to which the instant application claims the benefit of priority, 60/101,318, filed September 21, 1998, sets forth a specific, substantial and credible utility for the instantly claimed invention.

Therefore, applicant argues that Sims is not valid prior art because Sims' 102(e) date is November 13, 1998, which does not predate applicant's earliest filed provisional application 60/101,318, filed September 21, 1998.

Applicant's arguments have been fully considered but are not persuasive, essentially for the same reasons set forth in the Office Action mailed May 3, 2006.

A. Sims anticipates the instant claims

With respect to anticipation of the instant claims, as essentially put forth in the Office Action mailed May 3, 2006, Sims teaches a protein called thymic stromal lymphopoietin (TSLP) that is nearly identical with most of SEQ ID NO: 2 of the instant application (residues 6-149 of SEQ ID NO: 2 of the instant application are 96% identical to residues 1-144 of Simms SEQ ID NO: 2, see attached alignment).

Further, Sims teaches monoclonal, polyclonal, humanized and chimeric anti-TSLP antibodies, and Fv, Fab and Fab2 anti-TSLP antibody fragments (see, in particular column 33, lines 7-67). Sims also teaches neutralizing anti-TSLP antibodies and fragments thereof, and compositions of said neutralizing anti-TSLP antibodies and fragments thereof, wherein the compositions are formulated for parenteral administration (see, in particular, column 34, lines 12-53 and column 27, lines 32-47).

As evidenced by Bost, antibodies can be specific for a given epitope and cross-reactive with multiple antigens. For example, Bost teaches antibodies which cross-react with IL-2 and HIV envelope protein, and establish that the binding to each protein is due to the presence of a homologous sequence in each protein of six amino acids, four of which are identical (see entire document, in particular the Abstract and Discussion, pages 577 and 583-585). Antibodies which bound either the HIV or IL-2

derived sequence did not cross-react with irrelevant peptides (see, in particular Results, pages 579-583).

As further evidenced by Bendayan et al., a monoclonal antibody can be highly specific for a given epitope and cross-reactive with antigens from different species or even distinct proteins not related to the original antigen (See entire document, in particular Discussion, pages 886-887).

Given the antibodies of Sims, which bind a polypeptide having an amino acid sequence nearly identical to SEQ ID NO: 2 of the instant claims, and given that antibodies can be both specific and cross-reactive with antigens from different species (or even distinct proteins not related to the original antigen) as evidenced by Bost and Bendayan, the antibodies of Sims would inherently bind SEQ ID NO: 2.

Therefore, the teachings of Sims, as evidenced by Bost and Bendayan, anticipate the instant claims.

Since the Office does not have a laboratory to test the reference antibodies, it is applicant's burden to show that the reference antibodies do not bind SEQ ID NO: 2. See *In re Best*, 195 USPQ 430, 433 (CCPA 1977); *In re Marosi*, 218 USPQ 289, 292-293 (Fed. Cir. 1983); *In re Fitzgerald* et al., 205 USPQ 594 (CCPA 1980).

B. USSN 09/399,492 and the applications to which it claims the benefit of priority, 60/131,298 and 60/101,318, do not disclose a specific, substantial and credible utility for anti-SEQ ID NO:2 antibodies

Applicant argues that a *prima facie* case of lack of utility has not been established for the instantly claimed antibodies with respect to the disclosure of the applications to which the instant application claims the benefit of priority.

In response to applicant's argument, applicant is invited to consider the following:

The instant specification and the application from which it is a divisional, 09/963,347, filed September 25, 2001, provide support under 35 U.S.C. § 112, 1st paragraph for the instant claims.

However, with respect to the claims under examination, the applications to which 09/963,347 claims the benefit of priority do ***not*** meet the requirements of 35 U.S.C. § 112, first paragraph in that the skilled artisan would not know how to ***use*** the claimed antibodies that bind SEQ ID NO: 2 as required by 35 U.S.C. § 112 and 35 U.S.C. § 101.

More particularly, USSN 09/399,492 (to be referred to henceforth as the '492 application), and the applications to which it claims the benefit of priority, 60/131,298 and 60/101,318, all of which are now abandoned, ***do not provide sufficient support under 35 U.S.C. § 112, 1st paragraph for the instant claims.***

The '492 application fails to disclose a specific and substantial credible utility for the SEQ ID NO:2 polypeptide to which the instantly claimed antibodies bind, and there was no apparent utility for SEQ ID NO:2 as of the filing date of the '492 application, September 20, 1999. Moreover, the '492 application does not disclose the biological role of the SEQ ID NO:2 polypeptide or its significance.

Note that the SEQ ID NO:2 polypeptide is also known as "IL-B50" in the instant application and the priority applications, and will be referred to by this name throughout.

It is clear that the IL-B50 polypeptide described in the '492 application was what was referred to as an "orphan protein" in the art as of the filing date of the '492 application. The DNA encoding the IL-B50 polypeptide was isolated because of its similarity to a known DNA. There is little doubt that, after complete characterization, the IL-B50 polypeptide encoded by the IL-B50 DNA would eventually be found to have a specific and substantial credible utility. This further characterization, however, is part of the act of invention and was not undertaken with the disclosure of the '492 application.

The situation in the '492 application is analogous to that which was addressed in *Brenner v. Manson*, 148 U.S.P.Q. 689 (Sus. Ct, 1966), in which a novel compound which was structurally analogous to other compounds which were known to possess anti-cancer activity was alleged to be potentially useful as an anti-tumor agent in the absence of evidence supporting this utility. The court expressed the opinion that all chemical compounds are "useful" as it appears in 35 U.S.C. § 101, which requires that an invention must have either an immediate obvious or fully disclosed "real world" utility. The court held that:

> "The basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility", "[u]nless and until a process is refined and developed to this point-where specific benefit exists in currently available form-there is insufficient justification for permitting an applicant to engross what may prove to be a broad field", and "a patent is not a hunting license", "[i]t is not a reward for the search, but compensation for its successful conclusion".

As of the filing date of the '492 application, the function and biological significance of the IL-B50 polypeptide were apparently undetermined. The '492 application did disclose, however, that the IL-B50 polypeptide was found to be similar to Interleukin-7: "[t]he present invention is based, in part, upon the discovery of a new cytokine sequence exhibiting significant sequence and structural similarity to IL-7" (page 4, lines 20-22 of the '492 specification).

Moreover, based upon the similarity between IL-B50 and IL-7, the '492 application disclosed that the IL-B50 polypeptide would be functionally similar to IL-7 "and related cytokines", such as other members of the hematopoietin family of four-helix bundle cytokines to which IL-7 belongs (see the '492 application at page 13 to page 14, 1st paragraph and Janeway et al., Immunobiology, 3rd Ed., Garland Science, pp. A:11 (1997). As was well known in to one of ordinary skill in the art, the hematopoietin family of cytokines encompasses a wide and diverse range of activities (see Janeway et al., *ibid*).

The '492 specification further discloses that "full length cytokines, and fragments, or antagonists will be useful in physiological modulation of cells expressing a receptor. It is likely that **IL-B50** has **either stimulatory *or* inhibitory** effects on hematopoietic cells, including, e.g., lymphoid cells, such as T-cells, B-cells, natural killer (NK) cells, macrophages, dendritic cells, hematopoietic progenitors, etc." (page 9, lines 7-13) (emphasis added by the Examiner).

However, these are ***general activities that would apply to virtually any member of the hematopoietin family of cytokines***, and are ***not specific to the IL-B50 polypeptide***.

It is further noted that the '492 specification alleged the IL-B50 is similar in sequence to IL-7 (see, page 13, 1st paragraph). However, Table 2 of the '492 specification only showed that a handful of residues were identical between the IL-B50 and IL-7, moreover an alignment using the default setting of BLAST as of the writing of the Office Action failed to find any recognizable similarity between SEQ ID NO:2 of the '492 application (IL-B50) and SEQ ID NO:7 of the '492 application (IL-7)(see attached alignment #2).

Thus, based on the very limited similarity between IL-B50 and IL-7 disclosed in the '492 application, one of ordinary skill in the art would not have reasonably concluded that the IL-B50 polypeptide possesses any or all of the biological activities of IL-7, especially in light of the specification's statement of "stimulatory or inhibitory effects" (see page 9).

To employ the antibodies against the IL-B50 polypeptide in future methods of modulating physiology or development of a cell was not a real world because the biological function of the IL-B50 protein were not known. It was not clear and could only be assumed that, as of the filing date of the '492 application, the IL-B50 polypeptide would have an effect, either stimulatory or inhibitory on hematopoietic cells (see page 9 of the specification and earlier in this office action).

In other words, to employ antibodies against the IL-B50 polypeptide in any of the methods disclosed in the '492 application would clearly have been to use them as an object of further research which had been determined by the courts to be a utility which, alone, does not support patentability.

Accordingly, since the '492 application did not disclose a credible "real world" utility for the IL-B50 polypeptide or antibodies thereto, the instantly claimed invention also does not find support under 35 USC § 112 in the '491 application.

9. ***In addition to arguing that a prima facie case of lack of utility was not established, applicant further argues that*** the patentable utility for the instantly claimed antibodies allegedly extends all the way back to applicant's earliest claimed priority application, 60/101,318, filed September 21, 1998.

Applicant's argument is not found convincing.

It is noted that anti-IL-B50 antibodies cannot be useful under 35 U.S.C. § 101 if the polypeptide to which they bind lacks a specific, substantial and credible utility.

However, SEQ ID NO: 2 as described in the 09/399,492, filed September 29, 1999 (and as described in provisional applications 60/101,318 and 60/131,298), lacks a specific, substantial and credible utility under 35 U.S.C. § 101 and lacks enablement under 35 U.S.C. 112, first paragraph ***as discussed in section 8 above***.

Applicant further argues that "the '318 application...discloses that IL-B5O may...be useful in the treatment of immune disorders, *e.g.*, T cell immune deficiencies, chronic inflammation, or tissue rejection, or in cardiovascular or neurophysioloigcal *conditions. See* the '318 application at page 13, lines 1-4"

Applicant's argument is not found convincing.

The full passage that applicant quotes from the '318 application reads as follows: Thus, ***IL-B50, or its antagonists***, may be useful in the treatment of abnormal medical conditions, including immune disorders, e.g., T cell immune deficiencies, chronic inflammation, or tissue rejection, or in cardiovascular or neurophysiological conditions. (emphasis added, *See* the '318 application sentence bridging pages 12-13).

Thus, this statement bridging pages 12-13 of the '318 application is just as equivocal about the utility of IL-B50 as the disclosure on page 9, 1st paragraph, of the '318 application ("The full length cytokines, and fragments, or antagonists will be useful in physiological modulation of cells expressing a receptor. It is likely that IL-B50 has either **stimulatory or inhibitory** effects on hematopoietic cells..." (emphasis added)). In the absence of other disclosure to support a definitive function for IL-

B50, it is not clear what the utility is for IL-B50, or for antibodies that bind IL-B50, whether they be antagonistic antibodies or not.

Applicant also argues that the '318 application discloses that IL-B50 and IL-7 are likely to share similar biological functions, that IL-7 exhibits strong effects on lymphopoietic development and that IL-B50 would bind to the alpha subunit of the IL-7 receptor.

Applicant's argument is not found convincing.

As put forth in more detail in section 8 above, the low overall homology between IL-7 and IL-B50, and the membership of IL-7 in a family of cytokines characterized by a wide and diverse range of activities is insufficient for one of ordinary skill in the art to reasonably conclude that the disclosed protein possesses any or all of the biological activities of IL-7, especially in light of the equivocal teachings of both the '492 and '318 applications concerning the biological activity of IL-B50 and the use of IL-B50 or antagonists thereof in treating abnormal medical conditions, including immune disorders.

In summary, all of the biological activities of a protein need not be known to obtain a patent, but there must be some specific and substantial activity or function known. Neither the 09/399,492, filed September 29, 1999, nor the provisional applications to which it claims the benefit of priority, 60/101,318 and 60/131,298, disclose a patentable utility for the IL-B50 polypeptide or antibodies thereto.

Thus, because the '492 application does not disclose how to use antibodies that bind SEQ ID NO: 2, the priority of the filing date of that application (and the earlier filed provisional applications 60/131,298 and 60/101,318) is ***denied***, see MPEP 201.11.

(note that U.S.C. § 120 states that the disclosure of the invention in the prior application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112).

Therefore, the effective filing date of the instant claims is September 25, 2001 because it was only with the filing of 09/963,347 on September 25, 2001 that a utility for the polypeptide of SEQ ID NO: 2, and the antibodies that bind said sequence, was established.

10. No claim is allowed.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachary Skelding whose telephone number is 571-272-9033. The examiner can normally be reached on Monday - Friday 8:00 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Chan can be reached on 571-272-0841. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Zachary Skelding, PhD
Patent Examiner
February 2, 2007

Christina Chan
CHRISTINA CHAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600

Alignments #1 and 2 attached,
3 pages Z.S. 2-2-07

NCBI **Blast 2 Sequences results**

Alignment #1

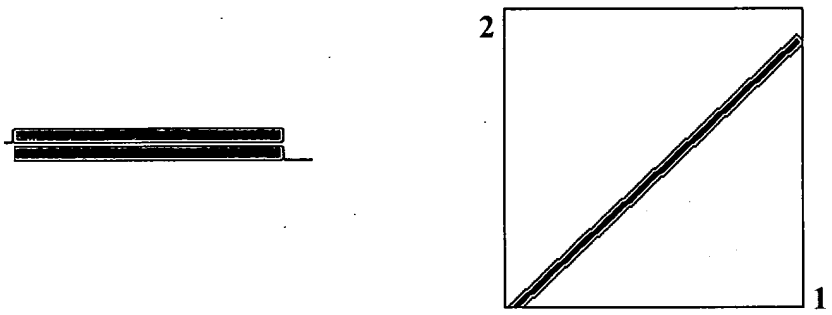
PubMed Entrez BLAST OMIM Taxonomy Structure

BLAST 2 SEQUENCES RESULTS VERSION BLASTP 2.2.15 [Oct-15-2006]

Matrix BLOSUM62 gap open: 11 gap extension: 1
x_dropoff: 50 expect: 10.000 wordsize: 3 Filter ☐ View option Standard
Masking character option X for protein, n for nucleotide Masking color option Black
☐ Show CDS translation Align

Sequence 1: lcl|Bazan_SEQ_ID_NO:2
Length = 149 (1 .. 149)

Sequence 2: lcl|Sims_SEQ_ID_NO:2
Length = 159 (1 .. 159)



NOTE:Bitscore and expect value are calculated based on the size of the nr database.

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 Score =  276 bits (707),  Expect = 2e-73
 Identities = 139/144 (96%), Positives = 139/144 (96%), Gaps = 0/144 (0%)

Query  6    MFPFALLLYVLSVSFRKIFILQLVGLVLTYDFTNCDFEKIKAAYLSTISKDLITYMSGTKS  65
            MFPFALLLYVLSVSFRKIFILQLVGLVLTYDFTNCDFEKIKAAYLSTISKDLITYMSGTKS
Sbjct  1    MFPFALLLYVLSVSFRKIFILQLVGLVLTYDFTNCDFEKIKAAYLSTISKDLITYMSGTKS  60

Query  66   TEFNNTVSCSNRPHCLTEIQSLTFNPNRRVRSLAKEMFAMKTKAALAIWCPGYSETQINA  125
            TEFNNTVSCSNRPHCLTEIQSLTFNP     SLAKEMFAMKTKAALAIWCPGYSETQINA
Sbjct  61   TEFNNTVSCSNRPHCLTEIQSLTFNPTAGCASLAKEMFAMKTKAALAIWCPGYSETQINA  120

Query  126  TQAMKKRRKRKVTTNKCLEQVSQL 149
            TQAMKKRRKRKVTTNKCLEQVSQL
Sbjct  121  TQAMKKRRKRKVTTNKCLEQVSQL  144



CPU time:      0.02 user secs.       0.00 sys. secs          0.02 total secs.

Lambda      K       H
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Gapped
Lambda      K       H
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0.267 0.0410 0.140

Matrix: BLOSUM62
Gap Penalties: Existence: 11, Extension: 1
Number of Sequences: 1
Number of Hits to DB: 291
Number of extensions: 103
Number of successful extensions: 1
Number of sequences better than 10.0: 1
Number of HSP's gapped: 1
Number of HSP's successfully gapped: 1
Length of query: 149
Length of database: 1,542,708,619
Length adjustment: 121
Effective length of query: 28
Effective length of database: 1,542,708,498
Effective search space: 43195837944
Effective search space used: 43195837944
Neighboring words threshold: 9
X1: 15 (7.0 bits)
X2: 129 (49.7 bits)
X3: 129 (49.7 bits)
S1: 40 (21.6 bits)
S2: 72 (32.3 bits)

NCBI **Blast 2 Sequences results**

Alignment #2

PubMed Entrez BLAST OMIM Taxonomy Structure

BLAST 2 SEQUENCES RESULTS VERSION BLASTP 2.2.15 [Oct-15-2006]

Matrix BLOSUM62 gap open: 11 gap extension: 1
x_dropoff: 50 expect: 10.000 wordsize: 3 Filter ☐ View option Standard
Masking character option X for protein, n for nucleotide Masking color option Black
☐ Show CDS translation Align

Sequence 1: lcl|1_SIN:7
Length = 177

Sequence 2: lcl|2_SIN:2
Length = 148

No significant similarity was found

```
CPU time:      0.01 user secs.       0.00 sys. secs          0.01 total secs.

Lambda      K       H
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Gapped
Lambda      K       H
   0.267   0.0410    0.140


Matrix: BLOSUM62
Gap Penalties: Existence: 11, Extension: 1
Number of Sequences: 1
Number of Hits to DB: 155
Number of extensions: 108
Number of sequences better than 10.0: 0
Number of HSP's gapped: 0
Number of HSP's successfully gapped: 0
Length of query: 177
Length of database: 1,547,396,696
Length adjustment: 125
Effective length of query: 52
Effective length of database: 1,547,396,571
Effective search space: 80464621692
Effective search space used: 80464621692
Neighboring words threshold: 9
X1: 16 ( 7.4 bits)
X2: 129 (49.7 bits)
X3: 129 (49.7 bits)
S1: 41 (21.9 bits)
S2: 74 (33.1 bits)
```